

CLAIMS

What is claimed is:

- 1 1. A method for selecting a victim to be used during resolution of a deadlock, the
2 method comprising the steps of:
3 initially establishing a plurality of resources involved in said deadlock as a set of
4 candidates to be said victim;
5 performing a first filtering pass that removes candidates from said set based on
6 CAN-BE-VICTIM flags associated with said candidates;
7 if more than a single candidate remains in said set after said first filtering pass,
8 then performing a second filtering pass that removes candidates from said
9 set based on priorities associated with said candidates; and
10 if more than a single candidate remains in said set after said second filtering pass,
11 then performing a third filtering pass that removes candidates from said set
12 based on runtimes associated with possessory entities associated with said
13 candidates; and
14 when said set has been filtered to include a single candidate, selecting said
15 candidate as said victim.
- 1 2. The method of Claim 1 wherein at least a portion of the priority of a given
2 resource is established dynamically.
- 1 3. The method of Claim 2 wherein said portion is established based on which other
2 resources are held by a possessory entity associated with the given resource.

- 1 4. The method of Claim 1 wherein at least a portion of the priority of a given
2 resource is established statically.
- 1 5. The method of Claim 4 wherein said portion is established based on the type of
2 the given resource.
- 1 6. A method for selecting a victim to be used during resolution of a deadlock, the
2 method comprising the steps of:
3 initially establishing a plurality of candidates involved in said deadlock as
4 candidates to be said victim;
5 filtering said plurality of candidates based on one or more factors until a single
6 candidate remains as a candidate to be said victim; and
7 selecting said single candidate as the victim to be used during resolution of said
8 deadlock.
- 1 7. The method of Claim 6 wherein the step of filtering further includes removing
2 from said plurality of candidates any candidates that have a CAN-BE-VICTIM
3 flag that indicates the candidate cannot be a victim.
- 1 8. The method of Claim 6 wherein the step of filtering further includes removing
2 from said plurality of candidates the candidates whose resource priority is higher
3 than the resource priority of at least one of the other candidates.

1 9. The method of Claim 6 wherein the step of filtering further includes removing
 2 from said plurality of candidates all the candidates that are associated with
 3 possessory entities have been running for a duration of time that is relatively
 4 longer than the duration of time that possessory entities associated with the other
 5 candidates have been running.

1 10. The method of Claim 6 wherein the step of filtering further includes the computer
 2 implemented steps of:
 3 removing some candidates from the plurality of candidates in a first pass based on
 4 a first factor wherein the candidates left is a first subset of candidates; and
 5 removing some candidates from the first subset of candidates in a second pass
 6 based on a second factor that is different from the first factor.

1 11. The method of Claim 10 wherein the candidates left after said second pass is a
 2 second subset of candidates and wherein the second pass based on the second
 3 factor is only performed if after performing the first pass more than one candidate
 4 is in the first subset of candidates.

1 12. The method of Claim 11 further comprising the computer-implemented step of
 2 performing a third pass based on a third factor only if after performing the first
 3 and the second pass more than one candidate is in the second subset of candidates
 4 wherein the third factor is different from the first factor and the second factor.

- 1 13. The method of Claim 6 wherein the step for filtering further comprises the
2 computer-implemented steps of:
3 performing a first pass to filter out any candidates that have a CAN-BE-VICTIM
4 flag indicating that one is not candidate for termination;
5 if more than one candidate is left after performing the first pass, then performing a
6 second pass to filter any candidates whose resource priority is higher than
7 the resource priority of at least one of the other candidates;
8 if more than one candidate is left after performing the second pass, then
9 performing a third pass to filter out all the candidates except the candidate
10 that has been running for the shortest duration of time.
- 1 14. The method of Claim 6 wherein the step of filtering includes filtering based on
2 priorities established for said candidates.
- 1 15. The method of Claim 14 wherein at least a portion of the priority of a given
2 candidate is established dynamically.
- 1 16. The method of Claim 15 wherein said portion is established based on which
2 resources other than said candidate are held by a possessory entity associated with
3 the given candidate.
- 1 17. The method of Claim 14 wherein at least a portion of the priority of a given
2 candidate is established statically.

1 18. The method of Claim 17 wherein said portion is established based on the type of
2 the given candidate.

1 19. A computer-readable medium carrying instructions for selecting a victim to be
2 used during resolution of a deadlock, the computer-readable medium comprising
3 instructions for performing the steps of:
4 initially establishing a plurality of resources involved in said deadlock as a set of
5 candidates to be said victim;
6 performing a first filtering pass that removes candidates from said set based on
7 CAN-BE-VICTIM flags associated with said candidates;
8 if more than a single candidate remains in said set after said first filtering pass,
9 then performing a second filtering pass that removes candidates from said
10 set based on priorities associated with said candidates; and
11 if more than a single candidate remains in said set after said second filtering pass,
12 then performing a third filtering pass that removes candidates from said set
13 based on runtimes associated with possessory entities associated with said
14 candidates; and
15 when said set has been filtered to include a single candidate, selecting said
16 candidate as said victim.

1 20. The computer-readable medium of Claim 19 wherein at least a portion of the
2 priority of a given resource is established dynamically.

1 21. The computer-readable medium of Claim 20 wherein said portion is established
2 based on which other resources are held by a possessory entity associated with the
3 given resource.

1 22. The computer-readable medium of Claim 19 wherein at least a portion of the
2 priority of a given resource is established statically.

1 23. The computer-readable medium of Claim 22 wherein said portion is established
2 based on the type of the given resource.

1 24. A computer-readable medium carrying instructions for selecting a victim to be
2 used during resolution of a deadlock, the computer-readable medium carrying
3 instructions for performing the steps of:
4 initially establishing a plurality of candidates involved in said deadlock as
5 candidates to be said victim;
6 filtering said plurality of candidates based on one or more factors until a single
7 candidate remains as a candidate to be said victim; and
8 selecting said single candidate as the victim to be used during resolution of said
9 deadlock.

1 25. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes removing from said plurality of candidates any candidates that have a
3 CAN-BE-VICTIM flag that indicates the candidate cannot be a victim.

1 26. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes removing from said plurality of candidates the candidates whose resource
3 priority is higher than the resource priority of at least one of the other candidates.

1 27. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes removing from said plurality of candidates all the candidates that are
3 associated with possessory entities have been running for a duration of time that is
4 relatively longer than the duration of time that possessory entities associated with
5 the other candidates have been running.

1 28. The computer-readable medium of Claim 24 wherein the step of filtering further
2 includes the computer implemented steps of:
3 removing some candidates from the plurality of candidates in a first pass based on
4 a first factor wherein the candidates left is a first subset of candidates; and
5 removing some candidates from the first subset of candidates in a second pass
6 based on a second factor that is different from the first factor.

1 29. The computer-readable medium of Claim 28 wherein the candidates left after said
2 second pass is a second subset of candidates and wherein the second pass based on
3 the second factor is only performed if after performing the first pass more than
4 one candidate is in the first subset of candidates.

1 30. The computer-readable medium of Claim 29 further comprising instructions for
2 the computer-implemented step of performing a third pass based on a third factor

3 only if after performing the first and the second pass more than one candidate is in
 4 the second subset of candidates wherein the third factor is different from the first
 5 factor and the second factor.

1 31. The computer-readable medium of Claim 24 wherein the step for filtering further
 2 comprises the computer-implemented steps of:
 3 performing a first pass to filter out any candidates that have a CAN-BE-VICTIM
 4 flag indicating that one is not candidate for termination;
 5 if more than one candidate is left after performing the first pass, then performing a
 6 second pass to filter any candidates whose resource priority is higher than
 7 the resource priority of at least one of the other candidates;
 8 if more than one candidate is left after performing the second pass, then
 9 performing a third pass to filter out all the candidates except the candidate
 10 that has been running for the shortest duration of time.

1 32. The computer-readable medium of Claim 24 wherein the step of filtering includes
 2 filtering based on priorities established for said candidates.

1 33. The computer-readable medium of Claim 32 wherein at least a portion of the
 2 priority of a given candidate is established dynamically.

1 34. The computer-readable medium of Claim 33 wherein said portion is established
 2 based on which resources other than said candidate are held by a possessory entity
 3 associated with the given candidate.

1 35. The computer-readable medium of Claim 32 wherein at least a portion of the
2 priority of a given candidate is established statically.

1 36. The computer-readable medium of Claim 35 wherein said portion is established
2 based on the type of the given candidate.

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